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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/480,193 01/10/00 YANG

S IR 3556

EXAMINER

IM52/0717

Gilbert W Rudman Esq
Elf Atochem North America Inc
Patent Department-26th Floor
2000 Market Street
Philadelphia PA 19103-3222

AHMED, S	
ART UNIT	PAPER NUMBER


1773
DATE MAILED:

07/17/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No. 09/480,193	Applicant(s) Yang et al.	
Examiner Sheeba Ahmed	Art Unit 1773	

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____

2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-17 is/are pending in the application

4a) Of the above, claim(s) _____ is/are withdrawn from consideration

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-17 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirements

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 3

20) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 2, 4, 6-8, 12, 16, and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 is dependent on claim 1 and refer to "the beads". However, there is no antecedent basis for "the beads" in either claim 1 or 2. Are "the beads" equivalent to the "polymeric particles" recited in claim 1? Similar ambiguity exists in claims 6-8. Clarification is requested.

Claims 4, 6-8, 12, 16, and 17 refer to a "...acrylate based" matrix. The term "based" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

Claims 6-9, 12, 16, and 17 recite percentages for the various components of the composite. However, it is unclear whether these are weight percentages or volume percentages. Clarification is requested.

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Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 4, 6-11, 16, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Wu (US 5,346,954).

Wu discloses polymer compositions having modified optical properties, i.e., reduced gloss, *(equivalent to the frosted composition of the claimed invention)* wherein the composition comprises 0.1% to about 40% by weight of substantially spherical polymer particles having an average diameter of from 2 to about 15 microns and having a particle size distribution such that at least 90% by weight of the particles fall within 20% of the average particle size *(equivalent to the polymeric particles or beads of the claimed invention and meeting the particle size and particle size distribution limitations)* (Column 3, lines 17-27). The spherical polymer particles comprise alkyl acrylate polymer with a 2-8 C alkyl group copolymerized with 0 to 10% of a cross linker and 0 to 50% of a vinyl monomer, such as styrene, based on the total weight of the particles *(thus meeting the composition limitations of the polymeric particles as recited in claims 6-11, 16, and 17)* (Column 3, lines 30-37 and Column 4, lines 5-15). The refractive index of the polymer particles is within 0.2 units of the refractive index of the matrix polymer (Column 3, lines 50-53). Cross linking monomers that may be used in preparing the polymer

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particles include allyl methacrylate and divinyl benzene (Column 4, lines 50-66). Examples of matrix polymers include poly(methyl) methacrylate, homopolymer of styrene and vinyl chloride, ABS polymers and polycarbonate (*thus meeting the limitations of claims 3 and 4*) (Column 10, lines 40-50 and Column 12, lines 23-25). Modifiers may be added to the composition (Column 11, lines 24-29) and the composition may be molded into plaques or extruded into articles of manufacture (*thus meeting the limitation that the composition is used to make a polymeric article*) (Column 18, lines 32-45 and Column 36, lines 65-68). All limitations of the claimed invention are disclosed in the above reference.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 5 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (US 5,346,954).

Wu, as discussed above, discloses the claimed invention but do not specifically disclose that the mismatch of the refractive index of the polymeric particles and polymeric matrix is greater than 0.02 or that the composition comprises 5 to 50% modifiers. However, the Examiner takes

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the position that it would have been obvious to one having ordinary skill in the art to mismatch the refractive index of the polymeric particles and polymeric matrix by more than 0.02 given that Wu specifically teaches that for uses where clarity is not essential it is not critical to supply a refractive index match (Column 18, lines 17-25). Furthermore, the Examiner takes the position that it would have been obvious to one having ordinary skill in the art to have determined the optimum amount of modifiers in the composition through routine experimentation in the absence of a showing of criticality in the claimed amount and particularly given that Wu specifically teaches that the addition of modifiers increases the impact strength of the composition and the higher the amount of the modifiers the better the impact strength.

4. Claims 2 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (US 5,346,954) in view of Minghetti (US 6,077,575).

Wu, as discussed above, disclose the claimed invention but do not specifically disclose that the polymeric particles have an average particle size of 25 to 55 microns and that the polymeric beads contain colorants. However, Minghetti discloses a composition comprising an acrylic polymer matrix having preformed, crosslinked particles of an acrylic polymer dispersed therein (Column 1, lines 15-17 and Column 2, lines 55-620. The polymeric particles are added in amounts of 0.1 to 80% based on the total weight of the product. The acrylic matrix polymer is preferably polymethyl methacrylate and the pre-formed particles also comprise polymethyl methacrylate (Column 4, lines 37-40 and 61-68). Pigments may be added to the particles to add color and the

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average particle size is typically 10 to 500 microns. Accordingly, it would have been obvious to one having ordinary skill in the art to increase the size of the polymeric particles disclosed by Wu and to add colorants to the polymeric particles given that Minghetti specifically teaches that doing so leads to a uniform distribution of particles and provide an aesthetically pleasing appearance.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheeba Ahmed whose telephone number is (703) 305-0594. The Examiner can normally be reached on Monday-Friday from 8am to 5pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Paul Thibodeau, can be reached at (703) 308-2367. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-5436.



Sheeba Ahmed
July 14, 2001



Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700